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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/721,262 | 11/26/2003 | Yusuke Nakazawa | Q78598 | 6442 |
| 23373 | 7590 | 12/01/2005 | EXAMINER | |
| SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037 | | | LIANG, LEONARD S | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2853 | |

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/721,262

Applicant(s)

NAKAZAWA, YUSUKE

Examiner

Leonard S. Liang

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The applicant has not responded to the examiner's previous jumbo specification objection. The examiner will assume that the applicant has compared the reference numbers in the figures with the reference numbers in the specification and found no errors. Therefore, the drawings that were previously objected to will now be accepted.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

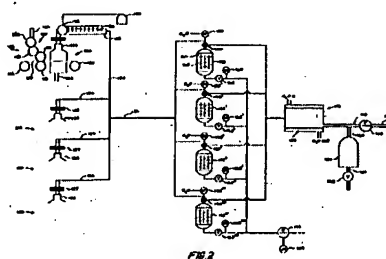
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 8-15, and 17 rejected under 35 U.S.C. 102(b) as being anticipated by Farber et al (US Pat 3768232).

Farber et al discloses:

- {claim 1} An image recording apparatus which records an image on a recording medium, the image recording apparatus comprising in a housing thereof (figure 2; housing inherent); a water vapor removing section which removes water vapor (figure 2, reference 104, removes both water vapor and solvent; figure 2, reference 166, removes solvent from vapor; column 1, lines 28-48; column 4, lines 55-65); a solvent recovering section which recovers vapor of organic

solvent, which evaporates within the housing (figure 2, reference 180, 184;
column 5, lines 27-49)



- {claim 2} wherein the vapor of organic solvent is vapor evaporated from a recording liquid for recording the image on the recording medium (column 3, lines 18-24; column 4, lines 55-65)
- {claim 3} wherein the water vapor removing section is provided at an inlet port which takes in air from outside of the housing into the inside of the housing (figure 2, reference 122)
- {claim 4} wherein the solvent recovering section is provided at an outlet port which exhausts air from the inside of the housing to the outside of the housing (figure 2, reference 179)
- {claim 6} wherein an activated carbon filter is used as an water vapor removing section (column 2, lines 43-44)
- {claim 8} wherein the image recording apparatus is an ink jet type image recording apparatus (figure 2, reference 106)
- {claim 9} wherein the solvent recovering section is disposed within the housing (figure 2)

- {claim 10} a head that has one or more ink channels and one or more ejection portions, wherein the head is disposed within the housing (figure 2, reference 106)
- {claim 11} wherein the vapor of organic solvent is evaporated from ink drops ejected by the head within the housing (column 4, lines 55-65)
- {claim 12} An image recording method (figure 2); removing water vapor (figure 2, reference 104, 106); recovering vapor of organic solvent, which evaporates within a housing of an image recording apparatus (figure 2, reference 180, 184; column 5, lines 27-49)
- {claim 13} wherein the recovering of vapor of organic solvent occurs within the housing (inherent, where housing is defined as encompassing all figure 2)
- {claim 14} wherein the water vapor is removed close to an inlet port which takes in air from an outside of the housing of the image recording apparatus into an inside of the housing of the image recording apparatus (figure 2, reference 122)
- {claim 15} wherein the solvent is recovered close to an outlet port which exhausts air from the inside of the housing of the image recording apparatus into the outside of the housing of the image recording apparatus (figure 2, reference 179)
- {claim 17} wherein water vapor is removed with an activated carbon filter (column 2, lines 43-44)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farber (US Pat 3768232).

Farber discloses, with respect to claims 5 and 16, an image recording apparatus and an image recording method (as applied to claims 4 and 15 above).

Farber differs from the claimed invention in that it does not explicitly disclose:

- {claims 5 and 16} wherein the housing is in a substantially sealed state except for the inlet port and the outlet port

Based on the specification, it is apparent that though no explicit housing is shown, the entirety of figure 2, a continuous solvent recovery system, is meant to be enclosed in a housing. That being said, it is naturally suggested that the inlet port and outlet port must be in connection with air outside the housing. As a result, it is naturally suggested that the housing is in a substantially sealed state except for the inlet and outlet ports.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Farber et al. The motivation for the skilled artisan in doing so is to gain the benefit of providing an external shell to support the disclosed solvent recovery system, so that it does not just simply hang in mid-air.

Claims 7 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farber et al (US Pat 3768232) in view of Gisser et al (US Pat 5395540).

Farber et al discloses, with respect to claims 7 and 18, an image recording apparatus and an image recording device (as applied to claims 1 and 12 above).

Farber et al differs from the claimed invention in that it does not disclose:

- {claim 7} wherein a silica gel filter is used as the water vapor removing section
- {claim 18} wherein water vapor is removed with a silica gel filter

Gisser et al discloses, with respect to claims 7 and 18, a silica gel drier used in combination with an activated carbon filter to filter and remove water vapor (column 7, lines 60-63). The use of a silica gel filter in combination with or in lieu of an activated carbon filter to remove water vapor is well-known in the art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Gisser et al into the invention of Farber et al. The motivation for the skilled artisan in doing so is to gain the benefit of improving filtering so as to separate the solvent from water vapor.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Straubinger et al (US Pat 5542965) discloses a process and installation for removing solvent vapor from exhaust air.

McGregor et al (US Pat 4708775) discloses disposal of wastes with solvent recovery.

Henkelmann (US Pat 4343769) discloses a catalytic solvent vapor incinerating apparatus.

Kusakabe et al (US Pat 5217579) discloses a distillation system for treating waste organic solvent.

Sakai (US PgPub 20010002952) discloses an image forming apparatus, image quality management method and storage medium recording program for executable of the method.

Sakai (US Pat 6512900) discloses an image forming apparatus having alarm which indicates carrier solvent filter replacement or lack of solvent supply.

Barnebey (US Pat 2810662) discloses a process and apparatus for hardening coating compositions.

Response to Arguments

Applicant's arguments, see non-final rejection, filed 05/05/05, with respect to the rejection(s) of claim(s) 1-8 under Saitoh (US Pat 6400920), Urano (US Pat 4254339), and Nii (US Pat 6693295) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Farber et al (US Pat 3768232) and Gisser et al (US Pat 5395540).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S. Liang whose telephone number is (571) 272-2148. The examiner can normally be reached on 8:30-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2853

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

11/26/05
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11/28/05
MANISH S. SHAH
PRIMARY EXAMINER